REMARKS/ARGUMENTS

Claims 1-7, 10-30 and 32-34 are currently pending in the present patent application. Claims 1-7, 10-11, 6, 20-21, 24, 27-28, 30 and 32-34 are amended. Claims 8-9 have been canceled without prejudice or disclaimer. Claim 35 is new. In view of at least the following, all currently pending claims are in condition for allowance, and, therefore, the Applicants' attorney requests that the Examiner withdraw all outstanding rejections. ***However, if after considering this response the Examiner does not allow all of the claims, the Applicants' attorney requests that the Examiner contact him to schedule a telephone interview to further the prosecution of this application.***

Objections to claims 16, 24 and 30 due to Informality

These claims have been amended according to the Examiner's recommendation for clarity. Applicants' attorney respectfully requests that the Examiner withdraw the respective objections.

Rejection of claims 1-9 and 32-34 under 35 U.S.C. § 101 due to Subject Matter

Claim 1

Claim 1 has been amended to overcome the rejection, which the Applicants' attorney respectfully requests that the Examiner withdraw.

Claims 2-3

These claims as amended are patentable at least by virtue of their respective dependencies from amended claim 1.

Claim 4

Claim 4 has been amended to overcome the rejection, which the Applicants' attorney respectfully requests that the Examiner withdraw.

Claims 5-7

These claims as amended are patentable at least by virtue of their respective dependencies from amended claim 4.

Claims 8-9

These claims have been canceled without prejudice or disclaimer.

Claim 32

Claim 32 has been amended to overcome the rejection, which the Applicants' attorney respectfully requests that the Examiner withdraw.

Claim 33

Claim 33 has been amended to overcome the rejection, which the Applicants' attorney respectfully requests that the Examiner withdraw.

Claim 34

Claim 34 as amended is patentable at least by virtue of its dependency from amended claim 33.

Rejection of claims 1-9, 11-13, 28 and 32-34 under 35 U.S.C. § 112

Claims 1-7

As discussed above with respect to 35 U.S.C. § 101, these claims have been amended to overcome their respective rejections, which the Applicants' attorney respectfully requests that the Examiner withdraw.

Claims 8-9

These claims have been canceled without prejudice or disclaimer.

Claims 11-13

Claim 11 has been amended to include structural aspects of the detector, and Applicants' attorney respectfully requests that the Examiner withdraw the respective rejection. Claims 12-13 are patentable at least by virtue of their respective dependencies from claim 11.

Claim 28

Claim 28 has been amended to clarify the recited limitation. Applicants' attorney respectfully requests that the Examiner withdraw the rejection.

Claims 32-34

As discussed above with respect to 35 U.S.C. § 101, these claims have been amended to overcome their respective rejections, which the Applicants' attorney respectfully requests that the Examiner withdraw.

Rejection of claims 1-8, 10-23, 27-28, 30 and 32-33 under 35 U.S.C. 102(e) as Anticipated by Kuki et al. (U.S. Patent No. 6,233,715, hereinafter "Kuki")

Claim 1

Claim 1 as amended recites a first group of consecutive bits, the first group having first and second separate portions and representing one of a logic 1 and a logic 0, the bits in the first portion each having a first state and the bits in the second portion each having a second state; and a second group of consecutive bits separate from the first group and each having the first state, the second group representing only the other of the logic 1 and the logic 0.

For example, referring to FIG. 5 and paragraphs 25-28 of the patent application, in an embodiment a first group of consecutive bits **50c-50d** has first portion **50c** and second separate portion **50d** and represents a logical 1. The bits in the first portion **50c** each have a first state (logic 0) and the bits in the second portion **50d** each have a second state (logic 1). A second group of consecutive bits **50e-50f** is separate from the first group **50c-50d** and each has the first state (logic 0). The second group **50e-50f** represents only a logical 0.

In contrast, Kuki does not disclose a first group of consecutive bits having first and second separate portions and representing only either a logic 1 and a logic 0, wherein the bits in the first portion each has a first state and the bits in the second portion each has a second state, and a second group of consecutive bits separate from the first group and each having the first state, wherein the second group represents only the other of the logic 1 and the logic 0. As the examiner notes on page 4 of the instant Office action, column 6 table II Kuki teaches a first group of consecutive bits having a first portion wherein each bit has a first state and a second portion wherein each bit has a second state, and a second group of consecutive bits all having a same state. Case 6. However, Kuki does not disclose a representational scheme according to the limitations of claim 1. The limitations recited by claim 1

indicate one of two representational schemes if four bits are to be used to represent a single bit (a "1/4" code): either a '1' and '0' are respectively represented by the consecutive bit sequences '0011' and '0000', or by the consecutive bit sequences '1100' and '1111'. Case 6 of Kuki's Table II, as cited by the Examiner, teaches representing a logical '0' and '1' with '0000' and '1100', respectively.

Furthermore, Kuki only discloses encoding schemes for servo data involving $^1/_3$ and $^1/_4$ bit representation. As described in Table II and paragraphs 32-33 of the instant application, certain embodiments of the invention may utilize $^1/_6$, $^1/_8$ or other code schemes that also read on claim 1. For example, bits '0' and '1' could be represented according to claim 1 by the consecutive bit sequences '000000' and '000111', respectively. Kuki does not contemplate utilizing such encoding schemes.

Kuki does not satisfy the limitations of claim 1. Applicants' attorney respectfully requests that the Examiner withdraw the rejection.

Claims 2-3

These claims are patentable at least by virtue of their respective dependencies from claim 1.

Claim 4

Claim 4 as amended, recites a first group of consecutive bits each having a first state, the first group representing only one of a logic 1 and a logic 0, and a second group of consecutive bits separate from the first group, the second group having first and second separate portions and representing the other of the logic 1 and the logic 0, wherein the bits in the first portion each have the first state and the bits in the second portion each have a second state.

Claim 4 is patentable for reasons substantially similar to those discussed with respect to amended claim 1, namely, that Kuki does not teach or suggest a representational scheme that satisfies the limitations of the claim.

Claims 5-7

These claims are patentable at least by virtue of their respective dependencies from claim 4.

Claim 8

Claim 8 has been canceled without prejudice or disclaimer.

Claim 10

Claim 10 as amended is patentable for reasons substantially similar to those discussed with respect to amended claim 1.

Claim 11

Claim 11 recites an input operable to receive a signal that represents a binary sequence having a first group of consecutive bits, each having a first logic level, and a second group of consecutive bits having first and second portions, the bits in the first portion having the first logic level and the bits in the second portion having a second logic level.

Claim 11 is patentable for reasons substantially similar to those discussed with respect to amended claim 1, namely, that Kuki does not teach or suggest a representational scheme that satisfies the limitations of the claim.

Claims 12-13

These claims are patentable at least by virtue of their respective dependencies from claim 11.

Claim 14

Claim 14 as previously presented is patentable for reasons substantially similar to those discussed with respect to amended claims 1 and 11.

Claim 15

Claim 15 is patentable at least by virtue of its dependency from claim 14.

Claim 16

Claim 16 is patentable for reasons substantially similar to those discussed with respect to claims 1 and 11.

Claims 17-19

These claims are patentable at least by virtue of their respective dependencies from claim 16.

Claim 20

Claim 20 as amended recites coding one of a logic 1 and a logic 0 as a first group of consecutive bits, the first group having first and second equally sized portions, the bits in the first portion each having a first state and the bits in the second portion each having a second state, and coding the other and only the other of the logic 1 and the logic 0 as a second group of consecutive bits separate from the first group and each having the first state.

Claim 20 is patentable for reasons analogous to those discussed with respect to amended claims 1 and 11. Kuki does not teach or suggest an encoding scheme that satisfies the limitations of the claim, and Applicants' attorney respectfully requests that the Examiner withdraw the rejection.

Claims 21-23

These claims are patentable at least by virtue of their respective dependencies from claim 20.

Claim 27

Claim 27 as amended recites writing a first code symbol having a first group of code bits and a second group of code bits wherein each bit in the first group has a first value and each bit in the second group has a second value that is different than the first value; and writing a second code symbol having a single group of code bits each having the first value.

Again, as analogously discussed above with respect to claims 1 and 11, Kuki does not disclose a code symbol having first and second groups of code bits wherein the bits of the first group have a first value and the bits of the second group have a second value that is different that the first value, and writing a second code symbol having a single group of code bits wherein each has the first value.

Claims 28 and 30

These claims are patentable at least by virtue of their respective dependencies from claim 27.

Claims 32-33

Claims 32-33 as amended are patentable for reasons substantially similar to those discussed with respect to amended claims 1 and 4.

Rejection of claims 9, 24-26, 29 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Kuki

Claim 9

Claim 9 has been canceled without prejudice or disclaimer.

Claim 24

Claim 24 as amended recites coding a first logical bit of servo data, and only the first logical bit, as a first group of four consecutive bits each having a first logic level, the first logical bit representing the first or a second logic level, and coding a second logical bit of servo data as a second group of four consecutive bits respectively having the first logic level, the first logic level, the second logic level, and the second logic level, wherein the second logical bit represents the first logic level if the first logical bit represents the second logic level and the second logical bit represents the second logic level if the first logical bit represents the first logic level.

For example, referring to FIG. 5 and paragraphs 25-28 of the patent application, in an embodiment a logical bit '0' of servo data 16a (FIG. 3) is encoded as a first group 50e-50f of four consecutive bits each having a first logic level 0. In this embodiment, the first logical bit represents logic level 0 . A second logical bit '1' of servo data is coded as a second group 50g-50h of four consecutive bits respectively having logic level 0, logic level 0, logic level 1, and logic level 1. The second logical bit '1' represents logic level 1, as the first logical bit '0' represents the first logic level 0.

In contrast, as analogously discussed above with respect to the rejection of claim 1 under 35 U.S.C. § 102, and as acknowledged by the Examiner on page 10 of the instant Office action, Kuki does not disclose that the second group of four consecutive bits respectively have the first logic level, the first logic level, the second logic level, and the second logic level ("0011").

The Examiner asserts that it would have been obvious to rearrange the logical states of the bits disclosed in Kuki "to achieve the predictable result of improving the signal-to-noise ratio of the servo data." Page 10, instant Office action. The Examiner's argument fails, however, because Kuki was, in fact, motivated to improve the signal-to-noise ratio involved (column 3, lines 12-17) and yet did not teach or suggest the consecutive bit sequences according to the recitations of claim 24. Furthermore, Kuki explicitly teaches away from such rearrangement. In its discussion of Table II, Kuki describes the pairs of representations in the Table as "[t]he rate ¼ Gray codes that can be used in a PR4 channel are shown in the following table II." Column 6, lines 47-48. It is evident that Kuki intended Table II to be a comprehensive listing of acceptable four-bit encoding schemes, and yet it excluded the representational bit sequences which result from the recited limitations of claim 24.

Kuki neither teaches nor renders obvious the limitations of claim 24. Applicants' attorney respectfully requests that the Examiner withdraw the rejection.

Claims 25-26

These claims are patentable at least by virtue of their respective dependencies from claim 24.

Claim 29

Claim 29 is patentable at least by virtue of its dependency from claim 27.

Claim 34

Claim 34 is patentable at least by virtue of its dependency from claim 33.

Conclusion

The absence of additional patentability arguments should not be construed as either a disclaimer of such arguments or that such arguments are not believed to be meritorious. In light of at least the reasons discussed herein, existing claims 12-15, 17-19, 22-23, 25-26, and 29, amended claims 1-7, 10-11, 16, 20-21, 24, 27-28, 30 and 32-34, and added claim 35 are in condition for allowance. Favorable consideration and a Notice of Allowance are respectfully requested. Should the Examiner have any further questions about the application, Applicant respectfully requests the Examiner to contact the undersigned attorney at (425) 455-5575 to resolve the matter.

In the event additional fees are due as a result of this amendment, payment for those fees has been enclosed in the form of a check. Should further payment be required to cover such fees you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

Respectfully submitted,

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